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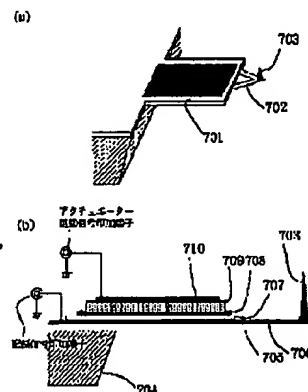
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(54) MICRO DISPLACEMENT TYPE INFORMATION DETECTING PROBE ELEMENT, AND SCANNING TYPE TUNNELING MICROSCOPE, INTERATOMIC FORCE MICROSCOPE AND INFORMATION PROCESSOR USING THE PROBE ELEMENT

(57)Abstract

PURPOSE: To provide a micro displacement type information detecting probe element capable of following up in correspondence with everything such as the waviness of μm order and periodic surface irregularity of nm order of a recording medium and substrate at the time of performing the recording, reproducing, or the like of information using a tunnel current or the like.

CONSTITUTION: In a micro displacement type information detecting probe element, an insulating layer laminated on a substrate is extended to form a first stage cantilever 701, and layer structure 708-710 with piezoelectric material held between electrode members is provided on the first stage cantilever 701. A second stage cantilever 702 is formed on the extension from the tip of the cantilever 701 of layer structure, and an information detecting probe 703 is formed at the free end part of the second cantilever 702. The first stage cantilever 701 is displaced utilizing reverse piezoelectric effect generated by applying voltage between the electrodes of the layer structure.



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